

REMARKS

Claims 13-21, 31-36, 39-42, and 46-49 are pending in the application. Claims 1-12, 22-30, 37, and 38 were canceled owing to a Restriction Requirement. Claims 43-45 were previously canceled. Claims 13, 31, 39, 46, and 47 are the only independent claims.

Claims Rejections - 35 U.S.C. § 103

Claims 13-21, 31-36, 39-42, and 46-50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent NO. 5,871,446 to Wilk in view of U.S. Patent No. 6,135,960 to Holmberg.

In response to this rejection and particularly in response to the citation of Holmberg, applicant has amended independent claims 13, 46 and 47. Independent claims 31 and 39 remain in their original forms.

Claim 13 Applicant has amended claim 13 herein to recite that the performing of the electronic 3D data acquisition includes coherently combining data generated via the transducers.

Neither of the references relied on by the Examiner disclose or suggest anything about the coherent combining of ultrasound data.

The Wilk '446 patent teaches a flexible carrier web with a plurality of electromechanical transducers. The web conforms to the patient. There are apertures in the web for insertion of medical instruments. Telemedicine is a potential feature of the Wilk system. AI (artificial intelligence) techniques are disclosed for automated measurements of specific tissue characteristics for comparison against normalcy is taught. A switching circuit for firing transducers in sequence is used. There is no teaching on how one combines transducer signals to form 3D images. In particular, there is no teaching as to coherently combining data generated via the transducers.

Holmberg discloses an ultrasound scanning apparatus including a rigid lattice structure where each source and receiver (scalar elements) has a position that is known

precisely and predetermined. Bistatic transmission is assumed (i.e., transmitting is carried out using sources different from the receivers). The lattice holds or is disposed in water and the patient is immersed into the system for full body imaging. Holmberg discloses the use of a full body coordinate system, with computer-controlled sonography (i.e., a computer controls the sensors and receivers to image a particular user-specified organ). Holmberg teaches the use of wavelet analyses taken from seismology. Holmberg further teaches a "common depth point imaging" method which appears to be an off-line focusing method. There is no real-time imaging (done off-line) but there is real-time data acquisition to support off-line processing. There is no teaching as to coherently combining data generated via the transducers.

Claim 46 Claim 46 has been amended herein to recite that the signal supplying and receiving steps are executed to organize the transducers into multiple data-gathering apertures effectuating an electronic scanning.

Neither Wilk nor Holmberg suggests this feature of applicants' invention. Neither reference suggests executing the signal supplying and receiving steps to organize the transducers into multiple data-gathering apertures effectuating an electronic scanning.

Claim 47 Claim 47 has been amended herein to recite that the activating of the sensors includes exciting the sensors to define multiple data-gathering apertures. Data from the apertures are operated on to produce an electronically encoded three-dimensional model or analog of said internal organic structures.

Amended claim 47 distinguishes over the cited references because neither Wilk nor Holmberg suggests exciting ultrasound sensors to define multiple data-gathering apertures.

Claim 31 Original claim 31 recites the step of providing a carrier holding a multiplicity of electromechanical transducers defining respective data gathering apertures and additionally recites that at least one of the steps of supplying and receiving includes coherently combining structural data from the respective apertures.

Neither Wilk '446 nor Holmberg discloses or suggests the use of a carrier holding a multiplicity of electromechanical transducers defining respective data gathering apertures. Neither Wilk '446 nor Holmberg discloses or suggests coherently combining structural data from multiple data-gathering apertures.

Claim 39 Claim 39 recites, inter alia, selectively energizing a first plurality of transducers to transmit a plurality of ultrasonic pulses into the patient, the pulses being differentially coded to enable detection of respective series of reflected pressure waves.

Neither Wilk '446 nor Holmberg discusses or implicates the differential coding of ultrasonic pulses to enable detection of respective series of reflected pressure waves.

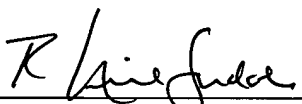
Conclusion

For the foregoing reasons, independent claims 13, 31, 39, 46, and 47, as well as the claims dependent therefrom, are deemed to be in condition for allowance. An early Notice to that effect is earnestly solicited.

Should the Examiner believe that direct contact with applicant's attorney would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the number below.

Respectfully submitted,

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